

CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (original) A dry pump apparatus comprising;  
a pumping mechanism,  
a controller for controlling the operation of the pumping mechanism, and a sensor for sensing the operating temperature of the pumping mechanism wherein the controller is configured to carry out an automated shutdown sequence involving the following steps;
  - a) ceasing operation of the pumping mechanism
  - b) monitoring the temperature of the pumping mechanism by means of the temperature sensor
  - c) at at least one pre-selected temperature interval, initiating operation of the pumping mechanism for a fixed time period so as to purge a proportion of contaminant particulate matter present until a predefined temperature is reached or a predefined time limit has passed.
2. (original) A dry pump apparatus as claimed in claim 1 wherein the controller comprises a microprocessor.
3. (original) A dry pump apparatus as claimed in claim 2 wherein the microprocessor is embodied in a computer.
4. (original) A dry pump as claimed in claim 3 wherein the computer has installed thereon computer software which causes it to perform the method steps a) to c).
5. (previously presented) A dry pump apparatus as claimed in claim 1 wherein the pumping mechanism includes a claw type rotor arrangement.

6. (original) A method for reducing the incidence of restart failure in a dry pump comprising the steps of;

- a) detecting the cessation of operation of the pumping mechanism
- b) monitoring the temperature of the pumping mechanism after cessation of operation
- c) at at least one pre-selected temperature interval, initiating operation of the pumping mechanism for a fixed time period so as to purge a proportion of contaminant particulate matter present until a predefined temperature is reached or a predefined time limit has passed.

7. (previously presented) A method as claimed in claim 6 wherein step c) is performed at preselected temperature intervals corresponding to regular drops in the monitored temperature of the pumping mechanism.

8. (original) A method as claimed in claim 7 wherein the regular drop interval is 10°C.

9. (previously presented) A method as claimed in claim 6 wherein the fixed time period is between 15 and 45 seconds inclusive.

10. (previously presented) A method as claimed in claim 6 wherein the fixed time period is the same for each pre-selected temperature interval.

11. (original) A method as claimed in claim 10 wherein the fixed time period is 30 seconds.

12. (previously presented) A method as claimed in claim 6 wherein the fixed time period is different for each pre-selected temperature interval.

13. (previously presented) A method as claimed in claim 6 wherein the method is performed for a predefined time limit.

14. (original) A method as claimed in claim 13 wherein the predefined time limit is 2 hours from cessation of operation.

15. (currently amended) A method ~~as claimed in claim 6~~ for reducing the incidence of restart failure in a dry pump comprising the steps of:

- a) detecting the cessation of operation of the pumping mechanism;
- b) monitoring the temperature of the pumping mechanism after cessation of operation;
- c) at at least one pre-selected temperature interval, initiating operation of the pumping mechanism for a fixed time period so as to purge a proportion of contaminant particulate matter present until a predefined temperature is reached or a predefined time limit has passed wherein at the end of each fixed time period of operation of the pump mechanism a separate inlet purge function is effected by the controller.

16. (previously presented) A method as claimed in claim 6 wherein the method is ceased when the first of a predetermined temperature or a predefined time limit has been reached.

17. (canceled)

18. (previously presented) A computer readable carrier medium which carries instructions adapted to be executed by a processor, the instructions which, when executed, define a series of steps to carry out an automated shutdown sequence of a dry pumping mechanism, comprising:

- a) detecting the cessation of operation of the pumping mechanism;
- b) monitoring the temperature of the pumping mechanism after cessation of operation; and
- c) at at least one pre-selected temperature interval, initiating operation of the pumping mechanism for a fixed time period so as to purge a proportion of contaminant

particulate matter present until a predefined temperature is reached or a predefined time limit has passed.

19. (previously presented) The computer readable carrier medium as claimed in claim 18 wherein the medium is selected from; a floppy disk, a CD, a mini-disc or digital tape.

20-22 (canceled)

23. (previously presented) The computer readable carrier medium as claimed in claim 18 wherein at the end of each fixed time period of operation of the pump mechanism, a separate inlet purge function is effected by the controller.

24. (previously presented) The computer readable carrier medium as claimed in claim 18 wherein step c) is performed at pre-selected temperature intervals corresponding to regular drops in the monitored temperature of the pumping mechanism.